UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105

Via Electronic Mail and US Postal Service

April 17, 2013

Mr. Daniel Tisoncik
Management Director of Environmental Affairs - Liability
United Airlines, Inc.
233 S. Wacker Drive – 28th Floor
Chicago, Illinois 60606

Re: EPA Conditional Approval of the Revised Workplan for PCB Investigation, Risk-Based Screening, and Remedial Action for Buildings 10 and 15, United Airlines San Francisco Maintenance Center, San Francisco International Airport

Dear Mr. Tisoncik:

Thank you for your submission of the *Revised Workplan for PCB Investigation, Risk-Based Screening, and Remedial Action for Buildings 10 and 15,* dated February 28, 2013 (Revised Workplan), prepared by Environmental Resources Management (ERM) on behalf of United Airlines, Inc. (UA), proposing certain polychlorinated biphenyl (PCB) characterization and remediation work at the UA San Francisco Maintenance Center at the San Francisco International Airport (Site). The U.S. Environmental Protection Agency (USEPA) is issuing this risk-based approval under the Toxic Substance Control Act (TSCA) pursuant to 40 C.F.R. § 761.61(c) requiring UA to implement the Revised Workplan consistent with the attached conditions (Approval). This Approval covers remediation of industrial waste lines and drains at the Site, as well as additional characterization of PCBs in Buildings 10 and 15.

As a result of project scoping discussions between UA and the USEPA, UA has proposed a phased approach for characterization and remediation work at the Site. The initial phase, which is covered by this Approval, involves only Buildings 10 and 15, which are relatively smaller buildings at the Site where concentrations of PCBs were detected in the industrial waste lines and drains. Subsequent phases, which may require one or more TSCA PCB approvals to be issued by USEPA, will focus on other areas at the Site, including outdoor areas. Once remediation and characterization activities have been completed in Buildings 10 and 15, USEPA will determine if additional characterization and/or remediation work is warranted based upon data gathered during this initial phase, and notify UA of additional approval applications that UA must submit to USEPA pursuant to 40 C.F.R. § 761.61(c).

This Approval does not relieve the property owner or UA from complying with all applicable federal, state, and local regulations and permits, nor does it exempt or waive any requirement to obtain additional cleanup orders, approvals or permits pursuant to other regulatory programs, where warranted. UA is also under a continuing obligation to comply with all requirements of TSCA regardless of whether or not such requirements are contained within this Approval. Departure from the terms and conditions of this Approval without written permission from USEPA may result in the revocation of this Approval and/or appropriate enforcement action. Nothing in this Approval limits USEPA's ability to seek penalties or pursue other legal action, including compliance orders or criminal proceedings, for violations of the terms or conditions of this Approval or of applicable federal, state or local law (including other TSCA PCB requirements).

Finally, USEPA reserves its right to require additional characterization and/or remediation work of PCBs by UA or other potentially responsible parties, as warranted and allowed by law.

We look forward to assisting you during implementation of the approved Revised Workplan as modified by this Approval. If you have any questions concerning this Approval, please contact Cynthia Ruelas at (415) 972-3329. Thank you for your cooperation.

Sincerely,

Jeff Scott, Director
Waste Management Division

Enclosure: Conditions of TSCA PCB Risk-Based Approval Issued by USEPA to UA Pursuant to 40 C.F.R. § 761.61(c)

Electronic cc w/enclosure: Gladston Taylor, UA
Terri Herson, ERM

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105

April 17, 2013

Conditions of TSCA PCB Risk-Based Approval Issued by USEPA to UA Pursuant to 40 C.F.R. § 761.61(c)

The U.S. Environmental Protection Agency (USEPA) is hereby approving the *Revised Workplan for PCB Investigation, Risk-Based Screening, and Remedial Action for Buildings 10 and 15,* dated February 28, 2013 (Revised Workplan), at the United Airlines, Inc. (UA) San Francisco Maintenance Center at the San Francisco International Airport (Site), as modified by the conditions of approval established below, pursuant to 40 C.F.R. § 761.61(c) (Approval). UA, as the owner and/or operator, shall implement the Revised Workplan as modified by these conditions.

Conditions

1. **Industrial Waste Lines and Drains.** In the Revised Workplan, UA includes polychlorinated biphenyl (PCB) sampling and remediation activities in the industrial waste lines and drains in Buildings 10 and 15. UA shall implement these activities one week prior to commencing field activities, with the following additional conditions:

   A. **"Lone" Drains.** USEPA understands that UA has not fully verified that certain "lone" drains (i.e. drains that have no industrial waste lines associated with them) in Buildings 10 and 15 depicted in Figures 4 and 5, respectively, are indeed unconnected to any waste lines. UA shall verify the interconnections of these "lone" drains, by review of blueprints, physical inspections or other means, and present documentation of these findings to USEPA within one week of commencement of remediation work. The results of the "lone" drain investigation may have an impact on Conditions 1B and 1C.

   B. **Building 10 Industrial Waste Lines and Drains.** Figure 4 of the Revised Workplan depicts an industrial waste line that is not scoped to be flushed and sampled. This line predominantly runs parallel to the other two industrial waste lines in the building. The line starts on the southwest corner of the paint shop and flows towards the sump just outside the southern corner of Building 10. This line appears to be located relatively close to the former air/electric access pit where PCBs were previously detected. One week prior to commencing remediation activities, UA shall verify that this line does not have any drains associated with this building. If drains associated with this industrial waste line are found, UA shall include flushing of this line as part of this phase of the remediation effort.

   C. **Building 15 Manholes.** There are two manholes located just outside Building 15; one is located on the east-southeast side of the building and the other is on the southern corner of the building. USEPA had a call with Ms. Terri Herson and Mr. Kevin Mucha of Environmental Resources Management (ERM) on April 8, 2013. Mr. Mucha indicated that these manholes are not associated with any of the drains located in Building 15. One week prior to commencing remediation work, UA shall verify that these manholes are not associated with any drains inside Building 15. If verification activities, such as tracing, indicate that drains inside the buildings are associated with the manholes, UA shall modify remediation efforts and rinsate sampling activities to include the most downgradient collection point as part of this scope.

2. **Waste Management.** Section 4.5 of the Revised Workplan indicates that all waste generated from the remediation activities will be properly disposed off-site. On April 5, 2013, USEPA had a call with Ms. Terri Herson, of ERM. During the call, Ms. Herson indicated that UA will coordinate off-site disposal activities through their in-house waste disposal program. UA shall provide USEPA with the point-of-contact at the UA facility that will be handling the off-site disposal activities prior to commencing field activities.

3. **Dermal Absorption.** The Revised Workplan indicates that indoor dust will be sampled to evaluate the risks to workers that may be indirectly exposed to certain building materials "(e.g., paints, sealants, caulk, and other building materials)". While sampling the dust will address the inhalation and ingestion pathways that are of immediate concern, the dust analysis does not take into account potential effects of dermal absorption that may take place from direct contact of skin to these building materials. To address this longer-term issue, UA shall revise its risk-based calculations to address risk from dermal absorption, and resubmit the calculations to USEPA prior to commencing field activities. This calculation shall also be documented in the Completion Report to be submitted after completion of this phase.

4. **Sampling Method.** Sections 4.3.1 and 4.3.2 of the Revised Workplan describe methods for rinsate sampling and drain sampling, respectively. USEPA approves these methods, with the following modifications:

    A. **Rinsate Sampling.** The potential source of PCBs in the industrial waste lines and drains may be from historic use of hydraulic oils. The proposed remediation activities involve flushing out oils, sediment and debris that may be present in the drains. However, if residual amounts of oil remain in the drains even after industrial waste line cleaning activities have been completed, an oil sheen may be present in the water that remains inside the drain. Prior to collecting the rinsate sample, UA shall observe and note whether or not an oil sheen is present on the water's surface. UA shall collect the grab rinsate sample at the water's surface to capture any possible trace oils carrying PCBs that may be present in the drain following flushing. Sampling methods shall be conducted in such a way that dilution of any oil sheen is minimized. Furthermore, the type of sampling equipment proposed for rinsate sampling is inappropriate. If a PCB oil sheen is present, the PCBs will adhere to polyethylene material in the sampling equipment, thus interfering with the sample analysis. UA shall use sampling equipment that does not contain material that will interfere with the sample analysis.

    B. **Drain Grate Wipe Samples.** Following the industrial waste line cleaning activities, wipe samples will be collected on each of the metal drain covers or grates. UA indicates that a standard-sized template (10 x 10 centimeters [cm]) will be used to delineate the sampling area. However, grate sizes at the facility vary in size and shape, and therefore the shape of the 10 x 10 cm standard-sized template shall be modified where appropriate (i.e.: 1 cm x 100 cm, 2 cm x 50 cm, etc.). The total area sampled must equal 100 cm^2. The Revised Workplan also indicates that if the entire metal grate cover does not provide the full 100 cm^2 area required to run the analysis following conventional sampling methods, then the entire surface will be sampled and the area will be recorded to normalize the concentration to a 100 cm^2 area. When calculating the area of the metal

grate, UA shall calculate and subtract from the total area the negative spaces, or area of the grate cover that is made up of space rather than metal.

5. **Target Cancer Risk.** Section 2.2 of the Revised Workplan describes development of the risk based screening levels (RBSLs), which are the proposed action levels for the remediation work, premised upon a 10^{-4} cancer risk. However, unless a departure is demonstrated to be warranted, USEPA requires the use of a target cancer risk level of 10^{-6} when calculating RBSLs. Within 30 days of receipt of this Approval, UA shall submit to USEPA revised RBSLs based on a 10^{-6} target cancer risk, along with a detailed description as to how the RBSLs were calculated. USEPA will also consider use of the RBSLs based on some other cancer risk. The basis for a deviation from the 10^{-6} standard may include real-world limitations (e.g., laboratory detection limit) that do not allow for the RBSL with a target cancer risk of 10^{-6} to be obtained, even after all other site-specific parameters used in calculating the RBSLs have been reevaluated. In its submittal on the proposed RBSLs, UA shall also delineate and reference the specific source of all equations and/or assumptions used or relied upon in establishing the RBSLs. In its Revised Workplan, UA referenced 4 separate equations used in calculating the RBSLs, one of which did not include enough details for USEPA to fully evaluate development of the RBSLs. UA shall provide a more specific reference for this equation used.

6. **RBSLs for Total PCBs.** Table 1-1 of the Revised Workplan provides RBSLs for Aroclor 1254, Aroclor 1016, and "other Aroclors". The term "other Aroclors" is not clearly defined in Table 1-1. EPA generally groups Aroclor mixtures based on toxicity; Aroclor 1016 is considered "lowest risk" and assigned appropriate toxicity values. All other Aroclors are assigned the high risk toxicity values. Additionally, USEPA evaluates exposure based on "total PCBs", rather than the individual Aroclors. Finally, the use of the approved RBSL shall address the additivity of effects of exposure to multiple Aroclor mixtures. UA shall follow these assumptions when calculating and resubmitting its proposed RBSLs pursuant to Condition 5 of this Approval.

7. **Concrete and Former Air/Electric Access Pit Sampling.** UA identified PCBs in sediment, debris and water samples taken from the industrial waste lines and drains in Buildings 10 and 15. UA shall conduct the characterization and remediation work for these areas set forth in the Revised Workplan. However, PCB contamination may be more widespread than these areas. Therefore, UA shall implement the following additional conditions regarding the industrial waste lines and drains in Buildings 10 and 15:

   A. **Concrete Sampling.** Following the initial investigation, UA shall prepare and submit to USEPA a workplan to evaluate the risk that potentially impacted concrete surfaces in Buildings 10 and 15 may pose on human health. This workplan shall be submitted within 45 days of completion of the initial phase.

   B. **Former Air/Electric Access Pit Sampling.** PCBs were discovered in one of the former air/electric access pits in Building 10. UA shall remediate all former air/electric access pits in Building 10. Prior to cleaning out these pits, however, any debris and/or water present in these pits should be collected from each pit and should be sampled for PCBs using analytical methods described in Section 6 of the Revised Workplan. PCB sampling shall also be conducted at each pit, following remediation of the air/electric access pits.

8. **Quality Assurance/Quality Control Samples.** Section 6.3 of the Revised Workplan indicates that matrix spike/matrix spike duplicate (MS/MSD) samples will be collected at the site. USEPA approves this methodology, with the following conditions: (i) MS/MSDs shall be a triplicate sample, (ii) similar MS/MSD samples shall be collected immediately adjacent to each other (i.e., three adjacent 10 x 10 cm squares), (iii) MS/MSD sample requirements shall be confirmed with an analytical laboratory, and (iv) UA shall collect MS/MSDs at the larger drains to ensure there is sufficient area to collect triplicate samples.

9. **Media of Concern.** The Revised Workplan uses the term "media of concern" throughout the document. This term is not defined as it applies to PCB characterization activities. UA shall provide a specific definition of this term in the Completion Report required by Condition 11 of this Approval.

10. **Receptors.** The type of receptor that is being referred to is not clearly defined when used throughout the Revised Workplan. There are two types of receptors that are discussed in the Revised Workplan; for instance, people affected by potential PCB contamination and the Bay are considered one type of receptor, while another type of receptor is the mathematical construct that is used for calculating RBSLs. UA shall more clearly define this term in the Completion Report required by Condition 11 of this Approval

11. **Completion Report.** UA shall submit a Completion Report within 30 days following completion of all work performed under this Approval. This Completion Report shall include, but not be limited to: a summary of activities conducted and how they complied with the requirements of this Approval, figure(s) depicting sample locations, laboratory analytical data obtained during the investigation and/or remediation, an evaluation of the data, a post-cleanup risk assessment to demonstrate protectiveness, and a conclusion. The results of the initial phase of the investigation in Buildings 10 and 15, as presented in the Completion Report, may indicate that additional work is warranted following characterization activities. In that case, USEPA will request one or more additional cleanup or characterization applications from UA.